

31. (amended) A continuous thermoforming apparatus for preparing a multi-layered article, the apparatus comprising:

means for co-extruding at least two distinct thermoplastic layers through an extrusion die to form a co-extrudate in a substantially non-oriented state; and

a rotating wheel having at least one thermoforming member, said at least one thermoforming member comprising:

a mold surface for receiving at least a portion of the co-extrudate;

a stripper plate positioned adjacent to the mold surface;

means for controlling the temperature of said mold surface to maintain the co-extrudate in a thermoformable state wherein at least a portion of said mold surface is maintained at a first temperature; and

means for controlling the temperature of said stripper plate to maintain the stripper plate at a second temperature, wherein said second temperature is not equal to said first temperature;

wherein the difference between said first temperature and said second temperature is from about 1°C to about 100°C.

34. (amended) A continuous thermoforming apparatus for preparing a single-layered or multi-layered thermoformed article, the apparatus comprising:

in the case of a multi-layered article, means for co-extruding at least two distinct thermoplastic layers through an extrusion die to form a co-extrudate in a substantially non-oriented state; and

a rotating wheel having an axis and at least one thermoforming member, said at least one thermoforming member comprising:

a dynamic upper mold cavity for receiving at least a portion of the co-extrudate or a thermoplastic sheet in a substantially non-oriented state;

a static lower stripper plate adjacent to said mold cavity;

A³
means for controlling the temperature of said mold cavity to maintain the co-extrudate or thermoplastic sheet in a thermoformable state at a predetermined temperature or in a predetermined temperature gradient; and

means for selectively displacing said dynamic upper mold cavity toward the axis of said rotating wheel to separate the thermoformed article from said mold cavity.

[Please add new claims 37-46 as follows.]

37. (new) A continuous thermoforming process for preparing a multi-layered article, the process comprising:

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co-extruding at least first and second thermoplastic layers through an extrusion die to form a co-extrudate in a substantially non-oriented state, wherein said first thermoplastic layer comprises at least one virgin alkylene terephthalate or naphthalate polyester and at least one reprocessed alkylene terephthalate or naphthalate polyester, at a ratio of virgin polyester to reprocessed polyester of from about 1:4 to about 4:1 by weight;

contacting at least a portion of said co-extrudate with at least one mold surface having a stripper plate adjacent thereto for a time sufficient to form said multi-layered article, while controlling the temperature of said mold surface to maintain the co-extrudate in a thermoformable state, wherein at least a portion of said mold surface is maintained at a first temperature, and while controlling the temperature of said stripper plate to maintain the stripper plate at a second temperature, wherein said second temperature is not equal to said first temperature.

38. (new) The process of claim 37 wherein the difference between said first temperature and said second temperature is from about 1°C to about 100°C.

39. (new) The process of claim 38 wherein the difference between said first temperature and said second temperature is from about 5°C to about 68°C.

40. (new) The process of claim 37 wherein said second temperature is lower than said first temperature.

41. (new) The process of claim 37 wherein said co-extrudate comprises a first, polar thermoplastic layer, a second, intermediate tie layer, and a third, non-polar thermoplastic layer.

42. (new) The process of claim 41 wherein said polar thermoplastic layer comprises polyethylene terephthalate and wherein said non-polar thermoplastic layer comprises high density polyethylene, low density polyethylene, linear low density polyethylene, or a mixture thereof.

AY 43. (new) The process of claim 41 wherein said tie layer is selected from the group consisting of ethylene/glycidyl methacrylate co-polymer, ethylene/maleic anhydride co-polymer, ethylene/glycidyl methacrylate/methacrylate ter-polymer, ethylene/glycidyl methacrylate/ethylacrylate ter-polymer, ethylene/glycidyl methacrylate/butylacrylate ter-polymer, ethylene/glycidyl methacrylate/ethylhexylacrylate ter-polymer, ethylene/maleic anhydride/methacrylate ter-polymer, ethylene/maleic anhydride/ethylacrylate ter-polymer, ethylene/maleic anhydride/butylacrylate ter-polymer, ethylene/maleic anhydride/ethylhexylacrylate ter-polymer, and mixtures thereof.

44. (new) The process of claim 37 wherein said first thermoplastic layer further comprises a core-shell toughener.

45. (new) The process of claim 37 wherein said first thermoplastic layer further comprises a polymer selected from the group consisting of polyamide, polycarbonate, polyethylene, and polypropylene, and mixtures thereof.

46. (new) The process of claim 1, further comprising laminating a thermoplastic layer onto one or more surfaces of said thermoformed article.